1.0 INTRODUCTION

Tetra Tech EM Inc. (Tetra Tech), under Contract No. 006244 with the Utah Department of Environmental Quality (UDEQ) Division of Solid and Hazardous Waste (DSHW), was issued Work Order 001 to evaluate the health risk of air emissions from the incineration of munitions at Tooele Chemical Agent Disposal Facility (TOCDF) and Chemical Agent Munitions Disposal System (CAMDS) (Tetra Tech 2000a; DSHW 2000b). TOCDF and CAMDS are located at the Deseret Chemical Depot (DCD) in Tooele County, Utah. Potential human health risks may result from the incineration of munitions stored at DCD that contain the organophosphate nerve agents, isopropyl methylphosphonofluoridate (GB) and O-ethyl-S-[2-diiospropylaminoethyl]-methyl phosphonothiolate (VX), and the blister agent, di-2-chloroethylsulfide (HD).

Under Task 03 of the work order, Tetra Tech was authorized to prepare a protocol ("the protocol") describing the technical procedures that will be used to evaluate the health risk from munitions incineration. The protocol describes the technical methodology, assumptions, and parameter values for the risk assessment. This protocol builds on earlier risk assessment work conducted by DSHW at DCD. The protocol also includes emission rates for compounds of potential concern (COPC) and a description of the procedures used to estimate emission rates.

The objectives of the protocol are to describe detailed technical procedures, assumptions, and parameter values that will be used to assess risk to human health from the incineration of munitions stockpiled at DCD. The risk assessment is a tool for DSHW to evaluate the protectiveness of the operating conditions of the RCRA permit for DCD. The DSHW has the authority and responsibility to establish permit conditions as necessary to protect human health and the environment (Utah Administrative Code [UAC] R315-3-23; Title 40 Code of Federal Regulations [CFR] 270.32(b)(2)).

The protocol was prepared in accordance with the peer review draft of the U.S. Environmental Protection Agency's (U.S. EPA) *Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities* (U.S. EPA 1998a), and the subsequent errata issued on August 2, 1999 (U.S. EPA 1999). U.S. EPA (1998a) was prepared as national guidance to consolidate information presented in other risk assessment guidance and methodology documents previously prepared by U.S. EPA and state regulatory agencies. U.S. EPA (1998a) is currently undergoing peer review. The latest approved guidance for

assessing health risk from RCRA hazardous waste combustors is *Revised Draft Guidance for Performing Screening Level Risk Analyses at Combustion Facilities Burning Hazardous Wastes* (U.S. EPA 1994). However, the U.S. EPA no longer supports the COMPDEP air dispersion model recommended in the 1994 guidance. The U.S. EPA Office of Solid Waste recommends the use of U.S. EPA (1998a) for conducting human health risk assessments on emissions from Resource Conservation and Recovery Act (RCRA) hazardous waste combustion units. Risk characterization will be performed with the INDUSTRIAL RISK ASSESSMENT-*h* VIEW® (IRAP-*h* VIEW®) software that performs risk computations in accordance with U.S.EPA (1998a) guidance.